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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/525,524

02/24/2005

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EXAMINER

ALAM, RASHID A

ART UNIT

PAPER NUMBER

4191

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04/29/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/525,524	<b>Applicant(s)</b> USHIDA ET AL.	
	<b>Examiner</b> RASHID A. ALAM	<b>Art Unit</b> 4191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 3/11/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 9-30 is/are pending in the application.
- 4a) Of the above claim(s) 25-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 9-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**Lithography Mask Blank**

Examiner: Rashid Alam    S.N. 10/525,524    Art Unit: 4191    April 14, 2008

**Detailed Action**

1.     The Applicant's request for reconsideration filed on 03/28/2008 was received. Claims 3 and 8 were cancelled. Claims 4 and 9 were amended. Claims 10-30 were added.
  
2.     The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on December 20, 2007.

***Election/Restrictions***

3.     Newly submitted claims 25-30 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The subject matter of aforementioned claims is a method of manufacturing a mask blank, classified in class 430, subclass 162, which is distinct from "a lithography mask blank", classified in class 430, subclass 5, as recited in the original claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 25-30 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 102***

4. The claim rejections under 35 U.S.C. 102(b) as anticipated by Shiota et al. on claims 1-9 are withdrawn, because the Applicant's arguments are persuasive.

5. Claims 1,2,4-7,9-14,16-21,23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Nozawa (US 2002/0058186).

Regarding claims 1, 5 and 6, Nozawa teaches a multilayer mask blank having a light translucent film on the surface of the substrate such that all layers contain different amounts of nitrogen in which the surface layer, one layer having more nitrogen than the other, which is the light translucent film, which also serves as the ammonium ion production preventive layer and is exposed on the surface of the mask after the mask is manufactured (see abstract and page 4, paragraph 0050 and paragraph 0075).

Regarding claim 2, the light translucent film on the surface of the substrate contains different amounts of nitrogen, one layer having more nitrogen than the other, which serves as the ammonium ion production preventive layer (see abstract and page 4, paragraph 0050 and paragraph 0075).

Regarding claim 4 and 9, Nozawa teaches a mask blank having a light translucent film on the surface of the substrate that contains nitrogen which serves as the ammonium ion production preventive layer and is exposed on the surface of the mask after the mask is manufactured (see abstract and page 4, paragraph 0050). Nozawa also teaches forming a pattern on the substrate (see page 2, paragraphs 0023 and 0024).

Regarding claim 7, the translucent film on the surface of the substrate that contains nitrogen also contains silicon (see abstract).

Regarding claims 10 and 17, the ammonium ion production preventive layer (light translucent film) thickness is from 672 angstroms (see table 1, entry 1) and the thin film, which contains nitrogen, has thickness of 935 angstroms (see page 5, paragraph 0094).

Regarding claims 11 and 18, the ammonium ion production preventive layer (light translucent film) contains Silicon, a metalloid, and Molybdenum, a metal (see page 6, paragraph 0096).

Regarding claims 12 and 19, the chemical composition of the ammonium ion production preventive layer (light translucent film) is made up of stable elements (see page 6, paragraph 0096).

Regarding claims 13 and 20, the ammonium ion production preventive layer (light translucent film) is oxidized (see page 6, paragraph 0096).

Regarding claims 14 and 21, the thin film contains silicon and molybdenum (see page 5, paragraph 0094) and the ammonium ion production preventive layer (light translucent film) is oxidized (see page 6, paragraph 0096).

Regarding claims 16 and 23, the exposure light source is a KrF laser and an ArF laser (see page 4, paragraph 0051).

Regarding claim 24, Nozawa teaches a multilayer mask blank having a light translucent film on the surface of the substrate such that all layers contain different amounts of nitrogen in which the surface layer, which is the light translucent film, serves as the ammonium ion production preventive layer and is exposed on the surface of the

mask after the mask is manufactured (see abstract and page 4, paragraph 0050 and paragraph 0075). Nozawa also teaches a multi layered phase shift mask blank having a light translucent film or a light translucent portion having the designated phase angle and transmittance and having a translucent film on a transparent substrate, comprising of nitrogen, metal, and silicon as a main component on said transparent substrate (see abstract).

***Claim Rejections - 35 USC § 103***

6. Claims 15 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nozawa (US 2002/0058186) as applied to claims 1,2,4-7,9-14,16-21,23 and 24 above, and further in view of Ohshima (2002/0142249).

Regarding claims 15 and 22, Nozawa teaches as stated above in paragraph 5. However, Nozawa is silent on the concentration of ammonium.

Ohshima teaches the concentration of ammonium ion is from 0 to 10,000 ppm, which is less than 20 nanograms per centimeter squared (see page 25, paragraph 0219). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention for the concentration of ammonium ion to be less than 20 nanograms per centimeter squared by Nozawa, because Ohshima teaches the concentration of ammonium ions being less than 20 nanograms per centimeter to accommodate anodization treatment of a lithographic printing plate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RASHID A. ALAM whose telephone number is (571)270-3959. The examiner can normally be reached on Monday to Friday 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rashid A Alam/  
Examiner, Art Unit 4191

/Dah-Wei D. Yuan/  
Supervisory Patent Examiner, Art Unit 4191